ABSTRACT OF THE DISCLOSURE

A method of determining ventilation inhomogeneity in the lungs is provided. During the first step of the method, a lung volume series is calculated from a series of measured lung inert gas concentrations and lung inert gas volumetric change measured data series. As a second step, the series of lung volumes is completed with a series of value representing the total gas exchange efficiency in the lungs. A global inert gas dilution ratio may be used for this purpose. The gas exchange efficiency values are such that less ventilation is represented by lower numbers. As the third step, the gas exchange efficiency series is plotted as an ordinate and lung volume series as an abscissa to form a graph. From this graph both the lung volume and homogeneity of ventilation become directly apparent.